Increased Electric Dependence and Resilience: A Match Made in Heaven or a Train Wreck Ahead?

Craig Glazer
Vice President-Federal Govt. Policy
PJM Interconnection, L.L.C.
Washington, D.C. USA
October 10, 2017
The United States Grid Security Model

- EPACT 2005: Congress subjects all ‘users of the bulk electric system’ to mandatory reliability standards, including cybersecurity standards
- Standards set by industry organization (NERC) but subject to approval by the federal regulator (FERC)
- Standards initial focus was reliability but have expanded to physical and cyber-security
  - CIP 14 Critical Transmission Facilities
  - Cybersecurity Plans
  - Supply Chain Management
The United States Grid Security Model (continued)

- **Electric Distribution System Security**: State regulated, largely left to individual utility.
- **Gas Pipeline Infrastructure**: Voluntary industry-driven guidelines, regulation by Transportation Security Administration
- **Tri-furcated Model**: Minimal upstream reach
Emerging threats and various degrees of control/self-help:

- **Cybersecurity**: Identification of assets, auditing, upstream supply chain procurement practices;
- **Geomagnetic Disturbances**: FERC Requirement for vulnerability assessments and mitigation to ensure steady state performance for “one in 100 year event”;
- **Electro-magnetic Pulses**: FERC declines to issue standard due to need for additional analysis of appropriate protection measures;
- **Natural events**: Super-storms Sandy and Irma, drought conditions etc.
Today’s Latest Discussion:
Resilience: An actionable goal or a new fad?
Reliability vs. Resilience

- **Reliability**: “Operating the elements of the bulk-power system] within equipment and electric system thermal, voltage, and stability limits so that instability, uncontrolled separation, or cascading failures of such system will not occur as a result of a sudden disturbance, including a cybersecurity incident, or unanticipated failure of system elements”

- **Resilience**: “Resilience is preparing for, operating through and quickly recovering from a high-impact, low-frequency event”
Resilience Planning

- What to plan for? Actionable threats? Remote threats?
- The line between prudent planning vs. gold plating?
- Differing customer requirements on resilience
  - Is the goal to empower customers through self-help vs. utility offerings?
  - Should resilience be targeted to certain customers?
    - Re-define universal service to ‘raise the bar’ for all or focus on customers willing to pay for more ‘resilient’ service?
    - Free riders given the interconnected nature of the grid?
An Added Complication: Who Decides?
Who Decides?

- **States:**
  - State Energy Policies: Governors/legislators
  - State PUCs
  - State Emergency Management agencies?
- **FERC**
- **Department of Homeland Security/FEMA**
- **Department of Energy**
- **Congress**
- **International Consensus**
“Hanging in mid-air”: a dangerous place
LET’S TALK…

Craig Glazer  
Vice President-Federal Government Policy  
PJM Interconnection  
202-423-4743  
CRAIG.GLAZER@PJM.COM